In the Claims:

Please amend the claims as follows:

1. (previously amended) A method of monitoring a load on a slender, tensioned elongated element extending from a subsea wellhead element to a surface vessel, by which the tensioned elongated element is arranged so as to be displaced in its longitudinal direction into or out of the subsea wellhead element via an entry at a top end of the latter, the method comprising:

measuring the structural behaviour of the wellhead element, and

estimating the bending moment and/or declination of the tensioned elongated element in a bottom region adjacent to and/or at said entry upon basis of the measurement of the structural behaviour of the wellhead element.

2. (previously amended) The method according to claim 1, wherein the measurement of the structural behaviour of the wellhead element comprises:

measuring the inclination, declination or bending moment of the wellhead element directly or indirectly.

3. (previously amended) The method according to claim 2, wherein the inclination/declination of the top end entry of the wellhead element is measured directly or derived from response measurements related to inclination/declination of the top end entry.

4. (previously amended) The method according to claim 1, wherein the estimation of the

bottom declination of the tensioned elongated element is based on the following equation:

$$\theta_{CT} = \frac{2EI_L}{T_{CT} \cdot l^2 + 2l\sqrt{T_{CT} \cdot EI_{CT}}} \cdot \theta_l = \frac{1}{\frac{1}{2}(kl)^2 + kl} \cdot \frac{EI_L}{EI_{CT}} \theta_l$$

wherein

θ_{CT} is the angle of the tensioned elongated element at said entry,

EI_{CT} is the bending stiffness of the tensioned elongated element,

EI_L is the bending stiffness of the wellhead element,

l is the length of the tensioned elongated element,

T_{CT} is the tension in the longitudinal direction of the tensioned elongated element at said top entry,

$k = \sqrt{\frac{T_{CT}}{EI_{CT}}}$ is the flexibility factor of the tensioned elongated element

and

θ_l is the angle of the wellhead element at the top entry thereof, measured directly or indirectly.

5. (previously amended) The method according to claim 1, wherein two or more response parameters θ_{zi} of the wellhead element are measured at different levels zi above the lower end of the wellhead element, and that the estimation of the bottom declination of the tensioned elongated element is based on relations of the following type

$$\mathbf{WAr} = \mathbf{W\Theta} \text{ with } \mathbf{r} = \begin{bmatrix} M_{CT} \\ \mathbf{q} \end{bmatrix}$$

wherein

$\mathbf{W}$ is a suitable non-singular weighting matrix,

$\mathbf{\Theta}$ is a vector of measurements containing response parameters, such as e.g. declinations/inclinations or strains/stresses or bending moments,

$\mathbf{A}$ is a coefficient matrix relating M_{CT} and $\mathbf{q}$ to the measured response,

M_{CT} is the bending moment of the tensioned elongated element, and

$\mathbf{q}$ is the parameters describing the lateral load distribution on the wellhead element.

6. (previously amended) The method according to claim 1, further comprising:

measuring the top tension of the tensioned elongated element and

estimating a vessel position that minimises the bending of the tensioned elongated element at the wellhead entry upon basis of the measured top tension in combination with the estimated bottom declination of the tensioned elongated element.

7. (previously amended) The method according to claim 1, further comprising:

measuring the top tension of the tensioned elongated element and the top angle of the tensioned elongated element, and

estimating a vessel position that minimises the bending of the tensioned elongated element at the wellhead entry upon basis of the measured top tension and top angle in combination with the estimated bottom declination of the tensioned elongated element.

8. (previously amended) The method according to claim 6, wherein the estimation of the preferred vessel position relative to the present vessel position in a coordinate system with orthogonal horizontal axes X and Y is based on the following relation:

$$\mathbf{W}\begin{bmatrix} \dfrac{K_T}{T_b} & 0 \\ 0 & -\dfrac{K_T}{T_b} \\ \dfrac{K_T}{T_t} & 0 \\ 0 & -\dfrac{K_T}{T_t} \end{bmatrix}\begin{bmatrix} x_e \\ y_e \end{bmatrix} = \mathbf{W}\begin{bmatrix} \sin\alpha_{mb}^{zx} \\ \sin\alpha_{mb}^{zy} \\ \sin\alpha_{mt}^{zx} \\ \sin\alpha_{mt}^{zy} \end{bmatrix}$$

wherein

$\mathbf{W}$ is a suitable non-singular weighting matrix,

$$K_T = \frac{1}{\int_0^L \frac{ds}{T(s)}}$$

and

$$\sin\alpha_{mb}^{zx} \cong \sin\alpha_{mb}\cos(\beta_{mb}-\gamma_{mb}) = \frac{K_T}{T_b}u_v \cdot \cos(\beta_{mb}-\gamma_{mb}) = \frac{K_T}{T_b}x_b$$

$$\sin\alpha_{mb}^{zy} \cong \sin\alpha_{mb}\sin(\beta_{mb}-\gamma_{mb}) = -\frac{K_T}{T_b}u_v \cdot \sin(\beta_{mb}-\gamma_{mb}) = -\frac{K_T}{T_b}y_b$$

$$\sin\alpha_{mt}^{zx} \cong \sin\alpha_{mt}\cos(\beta_{mt}-\gamma_{mt}) = \frac{K_T}{T_t}u_v \cdot \cos(\beta_{mt}-\gamma_{mt}) = \frac{K_T}{T_t}x_t$$

$$\sin\alpha_{mt}^{zy} \cong \sin\alpha_{mt}\sin(\beta_{mt}-\gamma_{mt}) = -\frac{K_T}{T_t}u_v \cdot \sin(\beta_{mt}-\gamma_{mt}) = -\frac{K_T}{T_t}y_t$$

where x_b, y_b, x_t, y_t are the Cartesian coordinates of the offset estimates related to the simultaneously measured (directly or indirectly) lower and upper end declination respectively given in the suitable measurement interpretation coordinate systems, and given the constraint that:

$$x_e = w_{xb} \cdot x_b = w_{xt} \cdot x_t$$
$$y_e = w_{yb} \cdot y_b = w_{yt} \cdot y_t$$

where w_{xb}, w_{yb}, w_{xt}, w_{yt} are weights related to the elements of the non-singular weighting matrix W.

9. (previously amended) A device for monitoring and/or controlling a load on a slender, tensioned elongated element extending from a subsea wellhead element to a surface vessel, by which the tensioned elongated element is arranged so as to be displaced in its longitudinal direction into or out of the subsea wellhead element via an entry at a top end of the latter, the device comprising:

means for measuring the structural behaviour of the wellhead element, and

means for estimating the bending moment and/or declination of the tensioned elongated element in a bottom region adjacent to and/or at said entry upon basis of the measurement of the structural behaviour of the wellhead element.

10. (previously amended) The device according to claim 9, further comprising:

first means for measuring the structural behaviour of the wellhead element, which first means comprises one or more inclinometers arranged on the wellhead element.

11. (previously amended) The device according to claim 9, further comprising:

first means for measuring the structural behaviour of the wellhead element, which first means comprises one or more devices that measure strains, stresses and/or moments, such as one or more strain gauges arranged on the wellhead.

12. (previously amended) The device according to claim 10, wherein said first means is arranged at the upper part of the wellhead element.

13. (previously amended) The device according to claim 11, wherein said first means are distributed around the circumference at one or more levels of the wellhead element.

14. (previously amended) The device according to claim 11, wherein said first means is arranged at the lower part of the wellhead element.

15. (previously amended) The device according to claim 9, further comprising:

second means for measuring the structural behaviour of the wellhead element, said second means being arranged at a different level on the wellhead element than said first means for measuring the structural behaviour of the wellhead element.

16. (previously amended) The device according to claim 15, wherein the second means for measuring the structural behaviour of the wellhead element comprises an inclinometer or a device that measures strains, stresses or moment.

17. (previously amended) The device according to claim 15, wherein said second means are distributed around the circumference at one or more levels of the wellhead element.

18. (currently amended) The device according <u>to</u> claim 9, wherein the means for estimating the bending moment and/or declination of the tensioned elongated element in a

bottom region adjacent to and/or at said entry upon basis of the measurement of the structural behaviour of the wellhead element comprises a computer program product with means for performing the estimation utilizing a method comprising measuring the structural behaviour of the wellhead element, and estimating the bending moment and/or declination of the tensioned elongated element in a bottom region adjacent to and/or at said entry upon basis of the measurement of the structural behaviour of the wellhead element.

19. (previously amended) The device according to claim 9, further comprising:

means for estimating a vessel position that minimises the bending of the tensioned elongated element at the wellhead entry upon basis of the measured top tension and optionally top angle in combination with the estimated bottom declination of the tensioned elongated element.

20. (previously amended) The device according to claim 19, wherein the means for estimating the vessel position comprises a computer program product with means for performing the estimation according to a method comprising measuring the structural behaviour of the wellhead element, and estimating the bending moment and/or declination of the tensioned elongated element in a bottom region adjacent to and/or at said entry upon basis of the measurement of the structural behaviour of the wellhead element, measuring the top tension of the tensioned elongated element and estimating a vessel position that minimises the bending of the tensioned elongated element at the wellhead entry upon basis of the measured top tension in combination with the estimated bottom declination of the tensioned elongated element.

21. (previously presented) The method according to claim 1, wherein the measurement and estimation are used to control the load on the tensioned elongated element.